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Jørgensen, Frances; Hyland, Paul

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Human Resource Development's Contribution to Continuous Improvement

Frances Jørgensen
Aalborg University

Paul Hyland
Central Queensland University

Continuous Improvement (CI) is an approach to organizational change that requires active involvement of skilled and motivated employees, which implies an important role for HRD practitioners. The findings from a literature review and a survey of 168 Danish manufacturing companies indicate however that HRD is rarely integrated with CI. The paper contributes by offering a model that depicts how HR and HRD functions could be exploited to support successful CI development and implementation.

Keywords: HRD and change management, Continuous Improvement, Survey

It is generally assumed that by recruiting, hiring, and training the right people for the right jobs, companies should be able to improve their performance. If jobs required only technical skills, the function of HR would ostensibly be rather straightforward (at least in this respect): job analyses would be conducted to determine the necessary knowledge, skills, and abilities for a position and these would subsequently be used to build a capable workforce. For organizations attempting to deal with increasing competition and environmental uncertainty, however, a technically-skilled workforce may no longer be adequate. More and more, employees are expected to participate in various organizational change initiatives aimed at improving organizational performance and the company's chance for future survival. The knowledge, skills, and abilities employees must possess in order to contribute successfully to organizational change go far beyond the technical skills for which most employees are recruited and hired. For instance, Wright and Snell (1998) stress the importance of flexibility of the workforce that is achieved through employee skill and ability development when attempting organizational change. The role of HRD therefore becomes especially critical in terms of employee training and development, as well as in finding ways organizations can capitalize on their employees' knowledge and skills (Purcell & Boxall, 2000).

A number of researchers have proposed that HRD can potentially contribute significantly to organizational change efforts. In particular, Pearn, Roderick, and Mulrooney (1995) describe the HRD professional as being in an optimal position to facilitate strategic learning and to develop the type a learning environment conducive to change. McKenzie and van Winkelen (2004) stress the importance of developing learning practices in organizations facing change. McLagan (1996) defines a number of roles for HRD practitioners that provide them with the means to support individual and group development needed for successful organizational change, including:

- strategic advisor on HR related issues
- designer and developer of HR systems
- organizational change consultant
- work and organizational design consultant
- designer and developer of learning programs
- instructor/facilitator
- expert in career and performance consulting
- qualified researcher capable of experimenting with new methods and designs that support the organization in achieving its objectives.

Dooreward and Benschop (2003) suggest in fact that whether organizational change succeeds or fails is dependent on the "unique contribution of HR" (p.274); Schuler (2000) proposes that successful organizations integrate HR practices into relevant aspects of their business. In a longitudinal study of 30 manufacturing firms, Shipton, Fay, West, Patterson, and Birdi (2005) demonstrated that the use of certain combinations of HR practices were predictive of successful organizational change and innovation, primarily through their impact on organizational learning.

MacDuffie and Pil (1999) describe how HRM practices aimed at the development of employee skills and employee motivation have had positive outcomes for 'learning factories', or organizations focusing on creating learning environments conducive to process improvement. Laursen and Foss (2003) suggest that by combining particular types of HR practices, an organization supports decentralization of problem-solving so that improvement can be planned and implemented by the persons involved in the targeted work processes.

Theoretical Framework

Continuous Improvement (CI) is both a philosophy of change that involves seeing opportunities for improvement in all work processes and a method for implementing change that is characterized by company-wide involvement and incremental improvements of existing processes (Boer, Berger, Chapman, and Gertsen, 2000). CI is a developmental process in itself, where organizations generally begin with implementing rather sporadic improvements and then progress over time as members of the organization become increasingly competent at certain key CI behaviors. Eventually, CI becomes a part of the daily activities and an ingrained part of the company culture as improvements become more pervasive and innovative. Bessant and Caffyn (1997) depict the progressive development of CI in a maturity model, where problem-solving and implementation of improvements are haphazard and occasional with no discernable structure at the first maturity level. A more systematic approach to CI has been adopted when the company reaches the second level. At level three, CI activities are characterized by being goal-oriented with respect to the team, departmental and organizational objectives; stage four CI is proactive in that employees seek opportunities for improvement before problems occur. At the top level of CI maturity, aptly labeled "strategic CI", CI is a fully incorporated and integral part of the organization. Individual, group, and organizational learning cycles facilitate the movement from one level of CI maturity to the next and a supportive organizational culture provides an environment that fosters the progression.

Although often perceived as a bottom-up approach to change, experiences with CI emphasize the importance of top management support and involvement. Chapman and Hyland (1997) have identified six critical requirements for successful long-term implementation of CI:

- *A clear strategic framework* - it must be clearly incorporated into the organization's strategic agenda and goals.
- *Needs to be managed strategically* - it needs to be well-planned and to include regular targets and milestones, both in the short and longer term, and it needs to include well-communicated measurement and display routines.
- *An underlying supportive culture* - a widespread recognition of the importance and value of CI, an acceptance that everyone in the organization has something to contribute to the process.
- *An enabling infrastructure* - the adoption of organizational structures which promote efficient two-way communication and decentralized decision making.
- *Needs to be managed as a process* - the adoption of learning or problem-solving processes.
- *A supporting toolkit* - the availability of a set of common problem-solving tools (and accompanying training in their application) is of great benefit in assisting employees to implement CI.

While intrinsically very simple, implementation of CI is anything but problem-free. Unsuccessful CI implementation can be attributed to many causes, the most common being a company's failure to align CI with its strategy and the lack of supportive organizational mechanism such as leadership, adequate knowledge and skill base among the workforce, as well as methods for encouraging employee participation and involvement (Boer et al., 2000; Schroeder & Robinson, 1991). Because much of CI occurs at the shop floor level, selecting employees on the basis of CI skills or capabilities is rarely appropriate. Instead, employees that are technically qualified for a job are generally trained in problem-solving, communication and collaboration, team working, etc. It is here that HRD has the greatest opportunity to contribute to CI, in addition to finding ways to motivate and involve those employees in the improvement activities. Furthermore, when involved in strategic planning and development, HRD should be able to support the alignment of HR practices with CI strategy, goals and systems (e.g. career development), structures (e.g. inter-organizational communication and job design), skill and competency development, and facilitating a culture that encourages learning and CI.

The potential role of HR in CI has been modeled by Jørgensen, Hyland and Kofoed (2006) and is shown below in Figure 1. The model depicts HR practices as influencing CI in two ways: at the organizational level, labeled here the "CI Organization", and at the level of specific CI activities, which is referred to as the "CI Implementation". In the upper portion of the model, HR is viewed as influencing the alignment of the organizational strategy with CI

while facilitating adoption of an organizational structure, enabling mechanisms, and leadership needed for achieving the competencies, creativity, and commitment required for successful CI. This level of integration could ostensibly occur if HRD planning and development were accomplished in tandem with CI planning and development.

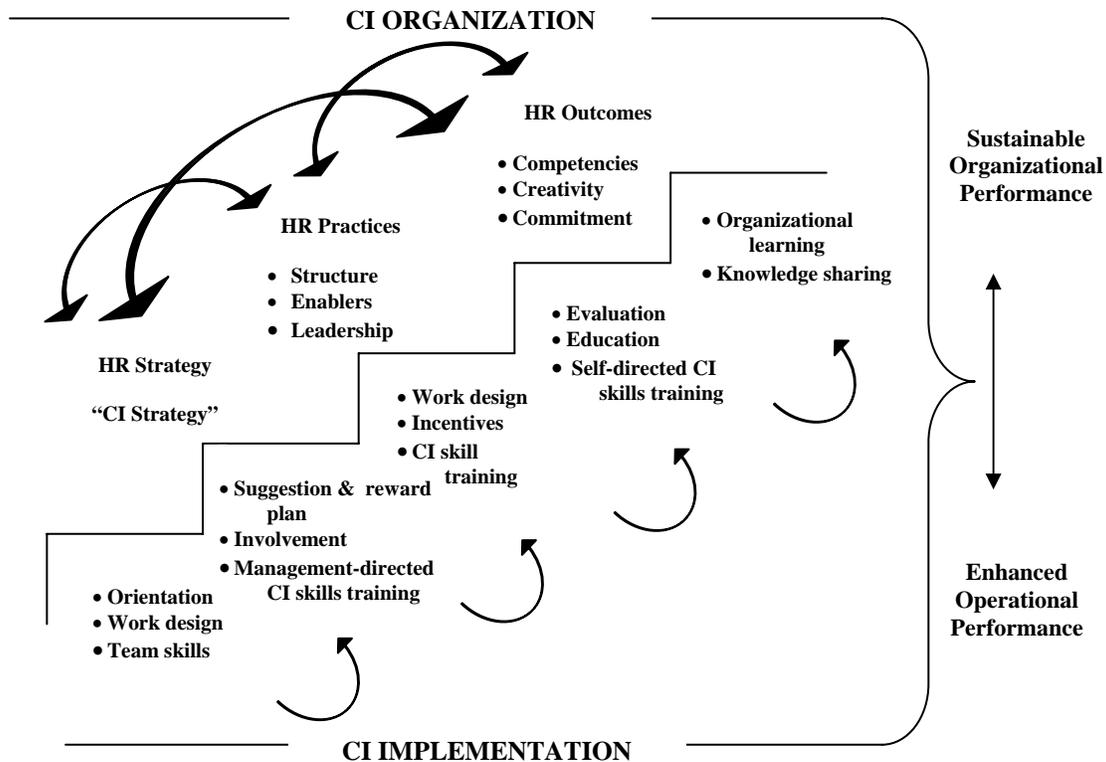


Figure 1: The role of HR in CI (based on Jørgensen, Hyland and Kofoed, 2006).

In the lower half of the model, specific HR practices target development of CI skills, knowledge sharing, team development, and involvement through work design, suggestion and reward plans, training and development, and incentives. Although many of these activities are encompassed in a traditional understanding of HR and HRD, the model assumes that the planning and implementation of these practices are aligned with CI objectives. For instance, typical skill training would be expanded to include experiential problem-solving exercises to support CI and incentives for developing CI initiatives would be designed by HRD. Performance reviews that link individual performance to promotion and ongoing employment are often designed and conducted by HRD could be integrated with CI evaluation, an increase in CI behaviors would then be expected. Consequently, improved performance would be expected to follow. Operational performance is linked to sustainable organisational performance in the model by an arrow on the left of the figure. This arrow indicates that operational performance is linked to the performance of the organization as a whole and that the performance of operational units within an organization can influence the sustainability of the whole organisation. Perhaps most important for CI, the model depicts HR practices at various stages of the CI development. The model hypothesizes that certain HR practices will be more or less important as employees begin CI and as they become more experienced and as CI begins to spread to other areas of the organization. Thus HR is viewed as being instrumental to CI development, which in turn is expected to produce operational and organizational outcomes.

There are however only a few scattered studies in the literature focusing on HRD's role in supporting CI in practice and those that do exist are rather vague in terms of detailing HRD's actual contribution to CI. For instance, Tjepkema, Horst, Mulder, and Scheerens (2000) report that HRD was rated as being important for European companies with strategies aimed at improvement and innovation. Hyland, Becker, Sloan and Jørgensen (forthcoming) discovered that CI tends to be integrated more into the daily life of firms involving HR in CI than in those that implement CI without any HR involvement. In addition, they found that those companies that involve HR engage in more CI activities than those in which HR is not involved. It also appears that there is a greater emphasis on the aspects of CI related to individual and group learning in firms integrating HR functions into the CI process

than in those not doing so. Finally, the authors found that those companies that were most motivated to increase employee skills and competencies and commitment to the CI process were more likely to involve HR in the CI implementation.

In a study based on statistical analyses of responses to the Continuous Improvement Network (CINet) Survey (2002), which consists of data from 543 companies in 10 countries in Asia, Australia, and Asia, it was shown that HR practices have an important contribution in terms of supporting CI and organizational performance through CI (Jørgensen, Boer and Laugen, 2006). In most of the studies, it is assumed that HR contributes to CI primarily through developing training and education for employees and in creating opportunities for individual and group learning, but this is not explored in detail. Further, as indicated by the list of requirements for successful CI compiled by Chapman and Hyland (1997) and presented above, as well as in the model shown in Figure 1, below, the potential contribution of HRD extends far beyond training, education, and facilitating learning opportunities.

Research Objective

The objective of this paper is therefore to examine how HR and HRD are being exploited in order to support CI. Specifically, the research seeks to address the following in within a Danish manufacturing organization

1. Which HR and HRD functions are being aligned with CI?
2. To what degree is CI being taken into account by HR and HRD?
3. Does the integration of CI with HR and HRD functions enhance CI development?
4. Does the integration of CI with HR and HRD enhance operational performance, via CI activities?

To address this objective, an analysis of data extracted from a small-scale survey of HR practices in Danish organizations involved in CI is presented in the next section. The discussion section of the paper then focuses on the implications this study has for HRD in terms of supporting organizations in their CI efforts.

Methods

In order to determine the degree to which HR functions are being practiced in companies implementing CI the authors constructed a survey assessment tool with 17 items based on the functions and activities outlined in HR/CI model presented in Figure 1: efforts to support alignment of CI with organizational strategy (i.e. "CI strategy"), development and implementation of CI structures, systems and enablers (e.g. suggestion, reward, evaluation, and incentive systems), skill and competency development of personnel and management, facilitation of individual, group, and organizational learning processes and knowledge sharing mechanisms, and practices aimed at creating and maintaining a CI supportive culture. In addition, the assessment tool includes two performance measures. The first performance measure, namely evaluation of CI development, was intended to reflect whether respondents perceive a progression or development of CI within their organizations. As mentioned previously, Bessant and Caffyn (1997) suggest that CI develops over time, from mostly random problem-solving to being systematic, organization-wide and strategically focused, and this first measure should capture this progression. The second performance measure was included to evaluate the impact CI is perceived as having on operational performance, as there is still little empirical data available to confirm that CI does in fact contribute to improved performance (Jørgensen, et al., 2006).

The survey items were to be assessed on a 4-point scale with attached descriptors. Responses of 1 correspond to situations in which HR is not involved in the described practiced for items 1-17 and when there is no CI development or impact of CI on operational performance for items 18 and 19; a response of 2 should be assigned when HR is involved in the practice (items 1-17) and there is low CI development and impact (items 18-19); a response of 3 would be assigned when HR is involved *and* CI is considered or taken into account with the described practice (items 1-17) and when there is moderate CI development and impact (items 18-19); finally, a response of 4 should be ascribed to HR involvement that is fully aligned with CI (items 1-17) and high CI development and impact on operational performance (items 18-19).

The survey was sent to 242 companies that were listed in a database owned by the Confederation of Danish Industry. Each of these companies had indicated interest and/or involvement in CI by requesting information and/or consulting services related to CI within the past five years. Only two companies included in the database are categorized as service organizations; the remainder are listed as manufacturing and production firms. Company sizes range from 144-3800 employees and include both national and international concerns.

The survey assessment tool was accompanied by a brief introductory letter addressed personally to the HR professional or personnel manager, if known, or the company manager. The recipients were instructed to respond to each item in a way that accurately represents the current involvement of HR functions, practices, and/or personnel in CI development and implementation activities, whether there was an official HR department or position in the company or not. For the purpose of this paper, only descriptive statistics were performed on the collected data. Findings from these are presented in the next section.

Results

In total, 187 companies completed and returned the survey, which corresponds to a response rate of 77%. Nineteen of these were omitted from the analysis as they were either incomplete or the respondents indicated that CI was not currently being implemented in the company, resulting in 168 (69%) completed surveys included in the analyses. Analysis of the data included the means and frequencies of the responses to all items (see Table 1).

Table 1: HR/CI assessment items with mean and frequency response values for 1-4 ratings

HR Practices	M	F1	F2	F3	F4
1. Strategic Planning & Development	1.32	129	29	6	4
2. Organizational mission & goal setting, measurement, achievement	1.59	97	47	5	4
3. Development, planning, implementation of involvement activities (e.g. suggestion systems)	1.65	84	63	18	3
4. Development, planning, implementation of coordination activities (e.g. communication, cross-function interactions)	2.05	0	161	6	1
5. Job design (inc. rotation, expansion, enrichment, team design)	2.06	0	160	6	2
6. Recruitment, transfer & promotion (systems and/or practices)	2.08	0	157	8	3
7. Selection (systems and/or practices)	2.08	1	154	11	2
8. Development, planning, implementation of reward systems (monetary or other)	2.08	1	155	10	2
9. Development, planning, implementation of compensation practices	2.02	14	138	14	2
10. Orientation of new employees (systems and/or practices)	2.01	15	141	8	4
11. Development, planning, implementation of training (e.g. technical skills)	2.05	8	150	15	3
12. Development, planning, implementation of CI training (e.g. problem solving)	1.84	44	109	13	2
13. Development, planning, implementation of team development	1.59	84	71	11	2
14. Development, planning, implementation of management & leadership training & development	1.32	127	31	8	2
15. Development, planning, implementation of CI initiatives	1.14	152	11	3	2
16. Development, planning, implementation of organizational learning initiatives	1.22	138	24	5	1
17. Development, planning, implementation of activities targeting culture	1.14	149	14	5	0
Performance Measures					
18. Evaluation of CI development (e.g. more pervasive, learning by experiences, higher level CI activity)	2.04	2	157	9	0
19. Evaluation of CI and operational performance outcomes	1.75	51	108	9	0

Mean values of the responses of “2” and above are considered meaningful in this instance, as these signify that HR does participate in the activity or practice at some level; higher means are interpreted as including at least some instances in which CI is taken into account when planning or implementing the HR function. On this basis, it appears that HR participates in many of the traditional HR functions, such as recruitment, selection, compensation and rewards, employee orientation, and training and development of both employees and managers. In addition, these companies utilize the HR function towards job design and the development, planning, and implementation of coordination activities. Review of the frequency of responses indicates however that CI is rarely taken into account with these HR practices. Notable exceptions of this finding appear in the areas of selection, training (general and

CI), compensation, and involvement activities, where a small percentage of the respondents do appear to integrate these practices with their CI objectives.

The analysis of the data also indicates that few of these organizations exploit the HR function to facilitate or support CI initiatives, initiatives aimed at establishing a learning environment, and/or the development of the organizational culture. Further, HR does not appear to be significantly involved in strategic planning and development or the establishment of the organizational mission and objectives. Finally, the majority of the respondents that at least some CI progression has occurred, although few report higher levels of CI development and the impact of CI on operational performance is recognized in still fewer of these companies.

Due to the near absence of a) companies fully integrating HR functions with CI in various areas of the organization and b) relatively low occurrence of positive evaluations of CI and the impact of CI on operational performance, it is impossible to demonstrate a relationship between HR integration in CI and the performance measures. However, the data analyses suggest that this relationship would be positive in a larger sample including more instances of successful CI and HR integration and it might be hypothesized that a strong correlation would be found between low HR participation and low CI success, although again, the lack of results on the high end of the scale eliminate the opportunity to provide statistical support for this claim.

Discussion and Conclusion

The results of the survey data presented here fail to demonstrate that HR and HRD practices are being exploited in order to support CI in the participating companies. Due to a multitude of extraneous variables and the small sample size, it is impossible to claim that the lack of HR integration in CI development and implementation is to blame for the relatively low level of CI development and rather dismal evaluations of CI's impact on operational performance outcomes or that the few higher evaluations of CI performance can be attributed to increased HR participation in activities targeted towards CI.

These findings—or the lack thereof—of support for an integrated practice of HR and CI are actually quite puzzling. If there is an existing HR function within an organization, why is it not being exploited to support CI and the promise CI offers for improving business performance? Drawing from a discussion by Hyland and Boer (2006), this dilemma may be explained by a lack of a CI strategy. A CI strategy—i.e. a strategy that effectively links efforts for building operational capacity with improvement and innovation capacity—would depend strongly on HRD to develop, capture, and utilize the human assets within the organization. In this case, integrating HRD with traditional HR functions such as recruitment, training, compensation and rewards, team, management and leadership development, job design, and evaluation would all target CI capability development. Further, HRD would be actively involved in facilitating and supporting employee involvement, participation and commitment, individual, team, and organizational learning, and knowledge sharing. One explanation for companies failing to develop a CI strategy and to link this strategy closely with their HR functions is that CI may still be viewed more as an isolated method for improvement rather than a change perspective, which would make the potential contribution of HRD less obvious. Other research on CI (e.g. Boer, et al., 2000; Jørgensen, 2003; Rijnders, 2003) suggests that this may in fact be the case and that CI is often being implemented and managed at the department level with little coordination of training, involvement initiatives, and incentives across organizational levels.

As previously mentioned, there is increasing evidence that HRD can play an important role in organizational change in general, and in particular innovation (e.g. Laursen and Foss, 2003; Shipton et al., 2005), which leads to the question as to whether CI somehow detracts the attention of HRD in an organization. For instance, CI is often “sold” as being easy and economical to implement even at the shop floor level of an organization and this may lead CI adopters to believe that little organizational and HRD is necessary. If this is the case, then the very characteristics that make CI so intrinsically appealing may also be hindering its successful practice! This conjecture is however not supported by the results in this study, where only very few respondents claim to integrate HR functions into organizational learning and culture development initiatives.

Finally, there may be characteristics of the participating companies that may have influence the direction of the findings in this study. Specifically, there is only now emerging research on how HR practices may differ in Scandinavia as opposed to other parts of Europe and the USA, primarily due to the high level of employee autonomy and unionization of the workforce in Denmark. Some researchers have suggested that HR functions are significantly more decentralized in select Northern European countries such as Denmark (Brewster and Soderstrom, 1994) and thus the management of CI, along with HR practices aimed at encouraging skill development, participation and involvement, and incentives may all rest with the department or line manager. Thus, by specifically asking for HR managers or those involved in HR practices to respond to the survey, the study may have excluded reports of HR practices being conducted by the department or line managers.

Contribution to HRD

The objective of this paper was to investigate whether HR and HRD functions are being integrated into CI development and implementation activities in companies that have adopted CI. To address this objective, a brief review of the literature on HR, HRD, CI, and organizational change was conducted. Although there appears to be growing interest in exploiting HR and HRD functions to support some types of organizational change initiatives—and learning and innovation initiatives in particular—there is little empirical evidence that HRD is being used to improve CI efforts, despite strong arguments for doing so. In an effort to determine if—and how—HRD is being integrated with CI development and implementation, a survey was administered to 168 companies in which CI is currently being practiced. The findings of the survey lend support to the notion that HRD functions are rarely being exploited to enhance CI.

The findings from this research have implications for both managerial practice and theory development in HRD and organizational change, as it represents one of the first efforts aimed at investigating the scope and extent of HRD's involvement in CI. Specifically, the research suggests that the existing HR and HRD functions within an organization could potentially serve as strong enablers for more successful CI. With relatively minor modifications to existing HRD procedures and activities (e.g. selection, training, compensation), CI efforts could be strengthened substantially, which should consequently enhance performance benefits from CI.

The study presented here was limited considerably by the sample size, as it was impossible to determine whether one or more HR and HRD functions are positively correlated with higher CI development and impact of CI on operational performance. One area for future research should thus focus on examining the relationship between HR and HRD functions in companies reporting high levels of CI development and impact on performance. Further, due to the growing decentralization of HR and HRD functions, a study in which the survey were administered to shop floor teams and department managers would help determine whether HRD is in fact being integrated with CI at the local level, as these activities would not have been captured in the current study.

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